

## **REMARKS/ARGUMENTS**

### **I. AMENDMENTS TO THE CLAIMS**

Claims 1 and 9-11 have been amended; claim 8 has been cancelled and claims 43 and 44 have been added. Claim 1 has been amended to better capture the envisioned commercial embodiments. Claim 8 has been cancelled in light of the amendments to claim 1, and claims 9-11 have been amended to correct dependency. The support for the amendments to claim 1 and for new claims 43 and 44 can be found throughout the specification and originally filed claims and figures. Specifically, support for new claim 1 can be found in at least original claim 8 and paragraphs 0020, 0054, 0056, 0058, 0061 and 0063 of the published application (U.S. Pregrant Publication No. 2005/0113657). In addition, support for new claims 42 and 43 can be found in at least paragraphs 0015, 0053, 0057 and 0062. Accordingly, no new matter has been introduced by way of these amendments and new claims. After entry of the amendments, claims 1-44 are pending.

### **II. THE INTERVIEW OF AUGUST 2, 2006**

The undersigned thanks the Examiner Berhanu and Primary Examiner Winakur for the courtesies extended during the personal interview of August 2, 2006. In accordance with The Manual of Patent Examining Procedure (MPEP) 8<sup>th</sup> Ed., §713.04 (Oct. 2005) the substance of the August 2<sup>nd</sup> interview is provided in the comments below.

### **III. THE CLAIMED INVENTION**

As described and claimed in the present application and currently pending claims, the invention relates to a device comprising a periplasmic binding protein (PBP) that is entrapped within matrix that is capable of entrapping, embedding or encapsulating the PBP. As was discussed during the interview, it is essential to the invention that the PBP remains capable of at least some three dimensional movement, *i.e.*, conformational mobility, upon analyte binding, after being entrapped, embedded or encapsulated within the matrix. At least paragraph 0007 and

the references cited therein describe the well-known class of proteins known as periplasmic binding proteins or PBPs, which undergo a three-dimensional conformational change in response to analyte binding. In addition, Applicants submit a review article that discusses the PBP family of binding proteins.

#### **IV. THE OFFICE ACTION OF FEBRUARY 14, 2006**

##### **A. THE REJECTION OF CLAIMS 1-35, 37, 38 AND 40-42 UNDER 35 U.S.C. §103 IS MOOT**

The Office Action of July 20, 2006 rejected claims 1-35, 37, 38 and 40-42 under 35 U.S.C. §103, as allegedly “being unpatentable over Alcalá ‘405 (previously cited) further in view of Lakowicz et al. ‘534 (previously cited).” *Office Action of July 20, 2006*, page 2. Without agreeing with the Examiner, Applicants have amended claim 1 to better capture the envisioned commercial embodiments. The claim amendments have rendered the outstanding obviousness rejection moot. Applicants request reconsideration and withdrawal of the obviousness rejection.

In particular, Applicants assert that the references, combined in the manner outlined in the Office Action of July 20, 2006, fail to render obvious the presently claimed invention. In making the rejection the Office Action establishes that Alcalá ‘405 does not teach a “sensing element containing at least one binding protein adapted to bind with at least one target analyte ....” *Office Action of July 20, 2006*, page 3. The Office Action then cites Lakowicz because Lakowicz allegedly teaches “the use of a sensing molecule to determine the presence or concentration of glucose in a sample ....” *Office Action of July 20, 2006*, page 4. Even assuming *arguendo* that the Office Action is correct in its characterization of Alcalá and Lakowicz, neither cited reference teaches or suggests the combination of elements of the present claims. Namely, neither Alcalá nor Lakowicz teaches or suggests a matrix that permits the periplasmic binding protein to retain conformational mobility, as the current claims require. Thus, the combination of Alcalá and Lakowicz, as outlined in the Office Action of July 20, 2006, does not teach each and every limitation of the claimed invention. Accordingly, Applicants

assert that the cited combination of references fails to establish a *prima facie* case of obviousness over the presently claimed invention. Applicants respectfully request reconsideration and withdrawal of the obviousness rejection of claims 1-35, 37, 38 and 40-42.

**B. THE REJECTION OF CLAIMS 36 AND 39 UNDER 35 U.S.C. §103 IS MOOT**

The Office Action of July 20, 2006 rejected claims 36 and 39 under 35 U.S.C. §103, as allegedly “being unpatentable over Alcalá ‘405 further in view of Lakowicz et al. ‘534 ... and further in view of Darrow et al. ‘651 (US Application No. 2002/0043651).” *Office Action of July 20, 2006*, page 6. Without agreeing with the Examiner, Applicants have amended claim 1 to better capture the envisioned commercial embodiments. The claim amendments have rendered the outstanding obviousness rejection moot. Applicants request reconsideration and withdrawal of the obviousness rejection.

In making the rejection, the Office Action establishes that the combination of Alcalá and Lakowicz does not teach a “device comprising at least one reference group ....” As discussed above, however, the present claims require the periplasmic binding protein to be embedded in a matrix in such a configuration as to permit the periplasmic binding protein to retain its conformational mobility. The addition of Darrow does not rectify this deficiency. Thus, the combination of Alcalá, Lakowicz and Darrow does not teach each and every limitation of the claimed invention. Accordingly, Applicants assert that the cited combination of references fails to establish a *prima facie* case of obviousness over the presently claimed invention. Applicants respectfully request reconsideration and withdrawal of the obviousness rejection of claims 36 and 39.

## CONCLUSION

Applicants have amended claims 1, 9-11, canceled claim 8 and added claims 43 and 44. The amendments to the claims and the newly introduced claims do not introduce new matter.

Applicants assert that the amendments to the claims have rendered moot the two remaining rejections under 35 U.S.C. §103.

Should the Examiner believe that further discussion of any remaining issues would advance the prosecution, he or she is invited to contact the undersigned at the telephone number listed below.

Respectfully submitted,

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